

ON BIRDS COLLECTED BY DOCTOR W. L. ABBOTT IN THE SEYCHELLES, AMIRANTES, GLORIOSA, ASSUMPTION, ALDABRA, AND ADJACENT ISLANDS, WITH NOTES ON HABITS, ETC., BY THE COLLECTOR.

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THE present paper is based upon two collections made by Dr. W. L. Abbott, of Philadelphia; one, of 59 specimens, on the Seychelles, during March, April, and May, 1890; the other, of 205 specimens, on Aldabra, Assumption, the Amirante group, Ile Glorieuse, and other islands northwest of Madagascar, during the period extending from July, 1892, to January, 1893, inclusive.

The representation of species, including several accidental visitants, is believed by Dr. Abbott to be very nearly complete, as the following extract from a letter received from him, written at Mahé, Seychelles, March 10, 1893, will more fully explain:

"I have now visited nearly all the small islands in this neighborhood, and think the collection of birds which has been sent is nearly complete.

... I think almost all the sea birds frequenting these seas are contained in this collection and the one sent three years ago. The only land birds of the Seychelles which I failed to obtain were *Gymnoscops insularis*, Tristram, and *Paluornis wardi*, E. Newton, but of the latter I obtained a specimen a few days since. It is on the verge of extinction here, but is said to be still fairly common in the neighboring island of Silhouette.

"No land bird exists (unless introduced) on any of the Amirantes or other islands between the Seychelles and Cosmoledo and Aldabra. This is probably due to the fact that these islands are extremely small, and consequently any small bird would be sooner or later blown to sea during the occasional (though rare) hurricanes.

"Aldabra proved quite interesting. I remained there three and a half months, and obtained specimens of all resident species. There are fourteen land birds resident, and I picked up six others that were evidently 'passers-by.' Also obtained nests and eggs of most of them.

Am sending you (in another letter) a full account of their habits, which may prove interesting. Of the fourteen residents at least eleven will prove new to science, I think.¹ The barn owl [undetermined form, possibly new] and the fruit pigeon [*Alectranas gyanzini*] seem similar to those of Madagascar. The *Tinnunculus* appears different. The 'flightless bird' proves to be a rail, as I anticipated. It is confined to the islands of Aldabra, Assumption, Astove, and Cosmoledo, though, as the last two were not visited, I only know by hearsay.² The most conspicuous water bird of Aldabra, which may be identical with that of Madagascar and Africa, is the flamingo.

"After leaving Aldabra I visited, and got wrecked upon, Gloriosa Island, near Madagascar, where I found three of the five land birds to be entirely different from those of Aldabra, and expect they may turn out to be new. Was unable to get to Cosmoledo and Astove, although three attempts were made; feel certain that they contain something interesting."

I.—BIRDS FROM THE SEYCHELLES.

Family LARIDÆ.

1. STERNA BERNSTEINI, Schlegel.

One specimen; Flat Island, August 7.

2. STERNA MINUTA, Linnæus.

One specimen; Mahé, April 2.

3. STERNA ANÆTHETUS, Scopoli.

Two specimens; Mahé, April 1, the other, without locality, August.

4. ANOUS STOLIDUS (Linnæus).

Three specimens; Seche. April 3.

5. GYGIS ALBA (Sparrmann).

Two specimens; Mahé, March 30.

Family STERCORARIIDÆ.

6. MEGALESTRIS ANTARCTICUS (Lesson).

One specimen, without special locality, August 5.

¹The number of new forms from Aldabra which I have been able to make out is only seven, but several others doubtfully referred to forms already known may prove to be really distinct when actually compared, our collection lacking the necessary material for making satisfactory comparisons.—R. R.

²The Aldabra and Assumption birds prove to be different, however, the latter new to science. Both forms are related to, but quite distinct from, the Madagascar species, *Dryolimnas curieri* (Pucheran).—R. R.

Family PROCELLARIIDÆ.

7. PUFFINUS TENEBROSUS, Pelzeln?

Puffinus tenebrosus, PELZELN, Ibis, 1873, 47 (King George's Sound; Vienna Imp. Mus.).

Three specimens; Ile Cousin, May 7.

Specific characters.—Similar to *P. auduboni*, Finsch,¹ but smaller (wing slightly shorter, other measurements, except length of nasal tube, very much less), tail much less graduated, and under tail-coverts more extensively dusky; no trace of whitish spot over anterior angle of eye; lores and ear-coverts almost wholly dusky; outer side of tarsus almost wholly dusky (nearly the lower half quite black), and outer side of middle toe also chiefly dusky; anterior margin of webs dusky.

I refer this bird, which is obviously distinct from *P. auduboni*, though nearly related, to Pelzeln's *P. tenebrosus* with much doubt. The latter, according to the original description, lacks the dusky anterior margin to the webs, and there are certain other discrepancies; but unless it is *P. tenebrosus*, I do not know what to call it.

According to Finsch,² *P. obscurus* (Gmelin) "may be distinguished at once by the uniform pure white under tail coverts," while the present bird has these feathers even more extensively dusky, as well as rather darker in color than in *P. auduboni*. It seems, however, that Mr. Salvin differently interprets or identifies *P. obscurus*, since, in making comparison between different specimens of what he calls that species, he mentions,³ as exceptional, a specimen from Samoa, in which "the crissum is white in the middle to its extremity, the sides alone being dusky," while in another Samoan bird "the central feathers of the crissum are dusky, tipped with white."

Possibly the present bird may be *P. obscurus*, according to Mr. Salvin's view as to what constitutes that species; but, lacking specimens for comparison, I can not make a satisfactory determination of the question.

Measurements * of *Puffinus tenebrosus* (?) from the Seychelles.

| Cata- logue num- ber. | Collec- tion. | Sex and age. | Locality. | Date. | Measurements | | | | | | | |
|--------------------------------|------------------|-----------------|----------------------------|-------------|--------------|-------|---------------------|---------|--------------|---------------------------------------|---------|----------------------------|
| | | | | | Wing. | Tail. | Graduation of tail. | Culmen. | Nasal tubes. | Depth of bill in front of nostril. | Tarsus. | Middle toe (with claw). |
| 119756 | U.S.N.M | Female ad. | Ile Cousin, Seychelles. | May 7, 1890 | 7.29 | 3.00 | 0.48 | 1.02 | 0.38 | ... | 1.45 | 1.52 |
| 119757 | do | Female ad. | do | do | 7.70 | 2.95 | .48 | 1.05 | .25 | 0.25 | 1.41 | 1.60 |
| 119758 | do | Male ad. | do | do | 7.59 | 3.05 | .52 | 1.00 | .27 | ... | 1.40 | 1.58 |
| | | | Average | | 7.47 | 3.00 | .49 | 1.02 | .30 | .25 | 1.42 | 1.57 |

* The measurements in this table are in inches.

¹ *Puffinus auduboni*, FINSCH, Proc. Zool. Soc. Lond., 1872, 111, (Atlantic Ocean).
P. obscurus, Audubon et Auctorum, nec *Procellaria obscura*; Gmelin.

² Proc. Zool. Soc. Lond., 1872, p. 111.

³ Ibis, July, 1888, p. 357.

Measurements * of *Puffinus auduboni*.

| Catalogue number. | Collection. | Sex and age. | Locality. | Date. | Wing. | Graduation of tail. | Culmen. | Nasal tubes. | Depth of bill in front of nostril. | Tarsus. | Middle toe. | |
|-------------------|-------------|---------------|---------------------------|--------------|-------|---------------------|---------|--------------|------------------------------------|---------|-------------|------|
| | | | | | Tail. | | | | | | | |
| 11949 | U.S.N.M. | Male ad ... | Bahamas ... | Apr. 1, 1859 | 7.90 | 3.85 | 1.10 | 1.20 | 0.28 | 0.22 | 1.45 | 1.75 |
| 11950 | ...do... | Female ad ... | ...do... | ... | 7.65 | 3.50 | .75 | 1.25 | .30 | .26 | 1.40 | 1.70 |
| 110651 | ...do... | Male ad ... | Green Key, Bahamas. | Apr. 4, 1884 | 8.15 | 3.60 | .90 | 1.18 | .30 | .30 | 1.65 | 1.75 |
| 110654 | ...do... | Male ad ... | Washerwoman Key, Bahamas. | May 7, 1884 | 8.00 | 3.65 | .75 | 1.22 | .30 | .28 | 1.65 | 1.85 |
| 110655 | ...do... | Male ad ... | ...do... | ...do... | 8.05 | 3.60 | .80 | 1.12 | .28 | .25 | 1.58 | 1.85 |
| 110656 | ...do... | Male ad ... | ...do... | ...do... | 8.00 | 3.50 | .90 | 1.12 | .27 | .28 | 1.60 | 1.80 |
| 110657 | ...do... | Female ad ... | ...do... | ...do... | 7.92 | 3.65 | .85 | 1.12 | .28 | .27 | 1.60 | 1.80 |
| 110658 | ...do... | Female ad ... | Green Key, Bahamas. | Apr. 4, 1884 | 7.50 | 3.45 | .85 | 1.20 | .27 | .27 | 1.58 | 1.75 |
| 80978 | ...do... | Male ad ... | Saba, West Indies. | ... | 7.95 | 3.40 | ... | 1.18 | .30 | .27 | 1.57 | 1.77 |
| 80979 | ...do... | Female ad ... | ...do... | ... | 8.25 | 3.55 | .80 | 1.15 | .32 | .28 | 1.65 | 1.85 |
| 114978 | ...do... | Female ad ... | Grenada, West Indies. | Apr. 2, 1888 | 7.82 | 3.62 | .92 | 1.08 | .25 | ... | 1.60 | 1.90 |
| Average | | | | | 7.93 | 3.58 | 0.86 | 1.17 | .29 | .27 | 1.58 | 1.80 |

* The measurements in this table are in inches.

Family RALLIDÆ.

8. GALLINULA CHLOROPUS (Linnæus).

Two specimens; La Digne, April 10.

Family ARDEIDÆ.

9. BUBULCUS BUBULCUS (Savigny).

One specimen; Ile Coëtivy, August 10.

10. BUTORIDES ATRICAPILLUS (Afzelius).

Two specimens; Mahé, April 4, and La Digne, April 10.

Family PHAËTONTIDÆ.

11. PHAËTON CANDIDUS (Drapiez).

Three specimens; Mahé, March 29, 30.

Family COLUMBIDÆ.

12. TURTUR PICTURATUS (Temminck) (?).

One specimen; Mahé, July 19.

This specimen, an adult female, differs so decidedly in coloration from an adult male of true *T. picturatus*, from Madagascar, that I very much doubt whether the two birds are identical. The Mahé specimen is

altogether paler in coloration, the back and lesser wing-coverts being light rusty chocolate, instead of deep violet-bay, and the under parts dull vinaceous-buff, instead of deep vinaceous. There are also other minor differences.¹

According to Dr. Selater² this bird was "certainly" introduced into the Seychelles; but whether from Madagascar or Mauritius is not stated. The bird found in Mauritius is "believed by Professor Newton to have been originally introduced there from Madagascar,"³ and Dr. Selater says⁴ that a Seychelles skin examined by him did not differ from Mauritius examples. Dr. Abbott, however, is positive that the Seychelles bird is not an introduced species, but a native of the islands.

It remains to be seen whether adult males from the Seychelles differ as much from Madagascar specimens of the same sex as does the female from a Madagascar male. From the nature of the differences observed, noted above, I am inclined to think that there are sufficient differences existing to warrant their separation; and should this surmise prove correct, and there be no mistake concerning the alleged introduction of the Seychelles bird from Mauritius, then the logical conclusion would be that the birds of the last-mentioned island are indigenous, and not introduced from Madagascar, as Professor Newton believed. In view of the above facts, I propose for the Seychelles bird the name *Turtur abbotti*.

13. *TURTUR ROSTRATUS*, Bonaparte.

Two specimens; Mahé, March 19 and 29.

14. *ALECTRÆNAS PULCHERRIMA* (Scopoli).

Five specimens; Mahé, March 30 and July 22.

Family FALCONIDÆ.

15. *TINNUNCULUS GRACILIS* (Lesson).

Two specimens; Mahé, March 28 and April 4.

Family PSITTACIDÆ.

16. *CORACOPSIS BARKLYI*, E. Newton.

Two specimens; Ile Praslin, May 6.

17. *PALÆORNIS WARDI*, E. Newton.

One specimen; Mahé, March.

¹Its measurements are as follows: Wing, 6.40 inches; tail, 1.55; culmen, 0.75; tarsus, 0.68.

²Proc. Zool. Soc. Lond., 1871, p. 693.

³Selater, loc. cit.

⁴Loc. cit.

Family CUCULIDÆ.

18. CUCULUS Sp?.

No specimens sent, but Dr. Abbott writes that a gray cuckoo, rather larger than the one found in Madagascar, occurs on Mahé. He saw a fragmentary specimen in the possession of an English druggist at Port Victoria.

Family MICROPODIDÆ.

19. COLLOCALIA FRANCICA (Gmelin).

Two specimens; Mahé, April 17.

Family "TIMELIIDÆ."

20. IXOCINCLA CRASSIROSTRIS (E. Newton).

Four specimens; Mahé, March 28, 29.

21. COPSYCHUS SEHELLARUM, A. Newton.

Two specimens; Marianne, April 11.

Family MUSCICAPIDÆ.

22. TERPSIPHONE CORVINA (E. Newton).

Six specimens; La Digue, April 9, 10; Marianne, April 11.

Family NECTARINIIDÆ.

23. CINNYRIS DUSSUMIERI (Hartlaub).

Seven specimens; La Digue, April 9; Félicite, April 12; Ile Cousin, May 7; Mahé, March 28.

Family MELIPHAGIDÆ.

24. ZOSTEROPS SEMIFLAVA, E. Newton.

One specimen; Marianne, April 11.

25. ZOSTEROPS MODESTA, E. Newton.

Three specimens; Mahé, March 28.

Family PLOCEIDÆ.

26. NESACANTHUS SEHELLARUM (E. Newton).

Four specimens; Ile Cousin, May 7; Marianne, April 11.

27. FOUDIA MADAGASCARIENSIS (Linnæus).

Two specimens; Mahé, March 28, 31.

II. BIRDS OF THE AMIRANTE GROUP.

Family LARIDÆ.

1. STERNA BERNSTEINI, Schlegel.

Ile Poivre; no specimens.

2. GYGIS ALBA (Sparrmann).

Iles Alphonse, Des Roches, Poivre, St. Joseph, and D'Arros; no specimens.

3. ANOUS STOLIDUS (Linnæus).

Ile Poivre; no specimens.

Family PROCELLARIIDÆ.

4. PUFFINUS SPHENURUS, Gould.

Two specimens: Ile Poivre, August 29. Creole name *Fouquet*. (Abbott, MS.)

Family DROMADIDÆ.

5. DROMAS ARDEOLA, Paykull.

Ile Poivre; no specimens.

Family ARENARIIDÆ.

6. ARENARIA INTERPRES (Linnæus).

Iles Poivre, St. Joseph, and D'Arros; no specimens.

Family SCOLOPACIDÆ.

7. NUMENIUS ARQUATUS MADAGASCARIENSIS (Linnæus).

One specimen; Ile Poivre, August 27.

8. NUMENIUS PHÆOPUS (Linnæus).

Iles Alphonse, Des Roches, Poivre, St. Joseph, and D'Arros; no specimens.

9. TOTANUS NEBULARIUS (Gunnerus).

One specimen, Ile St. Joseph, August 29.

Family ARDEIDÆ.

10. ARDEA CINEREA, Linnæus.

Iles Alphonse, Poivre, and St. Joseph; no specimens.

11. BUTORIDES ATRICAPILLA (Afzelius).

Ile Alphonse, August 24; one specimen. Also found on Iles Des Roches, Poivre, St. Joseph, and D'Arros, *vide* Abbott, MS.

12. BUBULCUS BUBULCUS (Savigny).

Ile Alphonse, Des Roches, Poivre, St. Joseph, and D'Arros; no specimens.

Family PELECANIDÆ.

13. PELECANUS RUFESCENS, Gmelin.

One specimen; Ile St. Joseph, August 29.

"A small colony—perhaps one hundred individuals"—said by Dr. Abbott to inhabit Ile St. Joseph, and noteworthy "as being the only colony of pelicans in these seas."

Family SULIDÆ.

14. SULA PISCATOR (Linnæus).

One specimen; Ile St. Joseph, August 29. Also found on Ile D'Arros. (Abbott, MS.)

15. SULA LEUCOGASTRA (Boddaert).

Three specimens; Ile D'Arros, August 30. Also found on Ile Poivre and St. Joseph.

"Creole name, 'Capucin.' Only a few pairs live in Aldabra. Breeds in considerable number in Gloriosa; also in the Amirantes." (Abbott, MS.)

It seems that Dr. Abbott confounded this species with the gray phase of *S. piscator*; at least the only specimens which he sent of *S. leucogaster* are the three from Isle D'Arros, Amirantes, mentioned above.

Family FREGATIDÆ.

16. FREGATA ARIEL (Gould).

One specimen; Ile St. Joseph, August 29.

The name *ariel*, Gould, having been quite generally cited as a synonym of *minor*, Gmelin, it is proper that I state here my reasons for reinstating it as a specific name:

A reference to Gmelin's diagnosis and the descriptions and figures upon which it is based proves beyond question that the name *minor* belongs to the small intertropical form of *F. aquila*. The bird under consideration is unquestionably a distinct species from *F. aquila*, being readily distinguished from the small form to which the name *minor* belongs by several very positive characters, involving not only differences of coloration, but of form and dimensions also. That the name *F. ariel* (Gould) belongs to this distinct species I have been able to determine positively by the assistance of Mr. Witmer Stone, conservator of the ornithological section of the Philadelphia Academy of Natural Sciences, who, at my request, kindly examined Gould's types in the collection of that institution. The characters of *F. ariel* are as follows:

Specific characters.—Much smaller than *F. aquila minor*, with very

much shorter and slenderer bill and smaller feet. Adult male with a transverse patch of white on each flank.

Adult male.—No. 128775, U.S.N.M., Ile St. Joseph, Amirante group, Indian Ocean, August 29, 1892; Dr. W. L. Abbott: Plumage black, duller, and inclining to dark grayish brown on tertials and under parts, the lanceolate feathers of the top of the head, hind neck, back, and scapulars, as well as some of the smaller wing-coverts, very slightly glossed with dull greenish and purplish (the former prevailing); outer webs of rectrices faintly glossed with purple. A conspicuous transverse, somewhat crescentic, patch of white on each flank. Shafts of rectrices pale brown or brownish white on under surface. "Bill brownish horn; gular pouch red; feet black; irides brown." (Abbott, MS.)

Total length (before skinning), 30.50 inches: wing, 20; tail, 13; middle feathers, 5.70; culmen, 3.30; greatest width of bill at base, 0.92; depth at base, 0.95; depth through narrowest part, 0.42; middle toe, 1.80.

Family PERDICIDÆ.

17. "PARTRIDGE."

Introduced from Madagascar, via Mauritius, into Ile des Roches, Poivre, and D'Arros. (Abbott, MS.)

Family COLUMBIDÆ.

18. TURTUR SATURATUS, Ridgway.

Turtur saturatus, RIDGWAY, Proc. U. S. Nat. Mus., XVI, No. 953, Advance sheet, August 16, 1893, p. 4.

Specific characters.—Similar to *T. aldabranus*, Selater, but much darker; the whole back rich purplish chocolate, the head, neck, and chest similar, but slightly paler; light-colored tips to rectrices more restricted and more tinged with gray (wholly gray in adult female); adult male with sides of neck distinctly glossed with green.

Habitat.—Amirante group (Ile Poivre; Ile Alphonse?).

Type.—No. 128725, U.S.N.M., male adult, Ile Poivre, August 22, 1892; Dr. W. L. Abbott. "Bill whitish horn at tip, cere and base livid purple; feet livid purple in front, leaden behind." (Abbott, MS.)

Not having any adult male from Ile Alphonse, I am somewhat doubtful regarding the question of whether the birds of that island and Ile Poivre are identical. An adult female from Ile Alphonse is in general characters similar to the male from Ile Poivre, but has the wings, rump, upper tail-coverts, and middle tail feathers much browner (very nearly Prout's brown on upper tail-coverts), while the terminal-spaces of the tail feathers are wholly gray or else tinged with brown, there being no white whatever. There is only a trace of green gloss on the sides of the neck, and this is observable only in certain lights. The dimensions are considerably smaller than in the Ile Poivre bird,

but not being greater than between males and females of *T. aldabranus*, the difference is undoubtedly merely sexual.

A young female from Ile Alphonse is similar to the adult but still browner, the upper tail-coverts, etc., approaching chestnut, the wing-coverts and some of the remiges tipped with chestnut, and the terminal tail spaces largely rusty brown.

Family "TIMELIIDÆ."

19. IXOCINCLA CRASSIROSTRIS (E. Newton).

One specimen; Ile Poivre, August 27.

20. COPSYCHUS SEHELLARUM (E. Newton).

One specimen; Ile Alphonse, August 24. (Introduced, *fide* Abbott, MS.)

Family PLOCEIDÆ.

21. FOUDIA MADAGASCARIENSIS (Linnæus).

Two specimens: Ile des Roches, August 26. (Introduced, *fide* Abbott, MS.)

22. ESTRELLA ASTRILD (Linnæus).

Two specimens; Ile Alphonse, August 24. (Introduced, *fide* Abbott, MS.)

Family FRINGILLIDÆ.

23. PASSER INDICUS, Jardine and Selby.

Iles des Roches, Poivre, St. Joseph, and D'Arros; no specimens. (Introduced, *fide* Abbott, MS.)

24. SERINUS ICTERUS (Bonaterre).

One specimen; Ile des Roches, August 26. (Introduced, *fide* Abbott, MS.)

III.—BIRDS FROM FLAT ISLAND.

Family LARIDÆ.

1. STERNA MINUTA (Linnæus).

Creole name, "*Fanchon*." (Abbott, MS.)

2. GYGIS ALBA (Sparrmann).

Family SCOLOPACIDÆ.

3. NUMENIUS PHÆOPUS (Linnæus).

Family ARDEIDÆ.

1. BUTORIDES ATRICAPILLUS (Afzelius).

No specimens of any of these species were received from Flat Island.

V.—BIRDS FROM COËTIVY.

Family LARIDÆ.

1. GYGIS ALBA (Sparrmann).

Family SCOLOPACIDÆ.

2. NUMENIUS PHÆOPUS (Linnæus).

Family ARDEIDÆ.

3. BUTORIDES ATRICAPILLUS (Afzelius).

4. BUBULCUS BUBULCUS (Savigny).

Family FREGATIDÆ.

5. FREGATA ARIEL, Gould?

(Possibly *F. aquila minor*, since Dr. Abbott did not distinguish the two species.)

Family PHASIANIDÆ.

6. "PARTRIDGE."

(Introduced, *vide* Abbott, MS.)

None of the species found on Coëtivy were collected by Dr. Abbott.

VI.—BIRDS FROM PROVIDENCE ISLAND.

Family LARIDÆ.

1. STERNA BERNSTEINI, Schlegel.

Two specimens, August 17.

2. STERNA MELANAUCHEN, Temminck.

Three specimens, August 17.

3. ANOUS STOLIDUS (Linnæus).

One specimen, August 14.

4. GYGIS ALBA (Sparrmann).

No specimens.

Family DROMADIDÆ.

5. DROMAS ARDEOLA, Paykull.

Three specimens, August 18.

Family ARENARIIDÆ.

6. ARENARIA INTERPRES (Linnæus).

One specimen, August 14.

Family CHARADRIIDÆ.

7. ÆGIALITIS GEOFFROYI, Wagler.

No specimens.

VII.—BIRDS FROM ASSUMPTION ISLAND.

Family LARIDÆ.

1. GYGIS ALBA (Sparrmann).

No specimens and no notes.

Family SCOLOPACIDÆ.

2. NUMENIUS PHÆOPUS (Linnæus).

No specimens.

Family RALLIDÆ.

3. DRYOLIMNAS ABBOTTI, Ridgway.

Rougetius abbotti, Ridgway, The Auk, XI, January, 1894, 74 (Assumption Island; U.S.N.M.).

Specific characters.—Similar to *D. curieri* (Pucheran), but upper parts very much lighter and grayer, black streaks on back narrower, and size less, the wing especially. Differs from *D. aldabranus* (Günther) in the streaked back and scapulars.

Type.—No. 128826, U.S.N.M.; Assumption Island, September 18, 1892; Dr. W. L. Abbott. Four specimens, September 18.

Family SULIDÆ.

4. SULA PISCATOR (Linnæus).

No specimens.

5. SULA CYANOPS, Sundevall.

One specimen, September 18. "Creole name, '*Fou general*.' A few breed in Assumption, laying a single egg on bare ground on sand dunes. Common in Gloriosa Island and Ile Lise, and also found in several of the Amirantes." (Abbott, MS.)

6. SULA ABBOTTI, Ridgway.

Sula abbotti, RIDGWAY, Proc. U. S. Nat. Mus., XVI, 1890, p. 599 (Assumption Island; U.S.N.M.).

Specific characters.—Most like *S. cyanops*, Sundevall, but bill much more robust, and coloration different, the prevailing color of the wings

and tail deep black instead of grayish brown, the wing feathers (both remiges and coverts) with inner webs and bases largely and abruptly pure white, and the upper tail-coverts and flanks marked with guttate or wedge-shaped spots of black.

Type.—No. 128761, U.S.N.M., adult male. Assumption Island, Indian Ocean, September 18, 1892; Dr. W. L. Abbott: Head, neck, back, rump, upper tail-coverts, and entire under parts pure white; scapulars and wing-coverts pure white basally, grayish black terminally, the former mostly concealed, but frequently exposed as angular spots or streaks, particularly on the lesser and middle wing-coverts; greater coverts with inner webs pure white, except at tip; remiges and primary coverts black superficially, but inner webs of secondaries chiefly (those of innermost feathers wholly) pure white, and those of the primaries also largely pure white, this color reaching to the shaft on the basal portion of the first quill, which also has the outer web white, and the shaft yellowish white, at base; on the innermost primary the white forms a broad edging which extends nearly to the tip, gradually running out to the edge, but at the base occupying the entire width of the web. Tail deep black, the feathers (except middle pair) sharply tipped with pure white, and broadly edged with the same at the base. Each of the upper tail-coverts has a large wedge-shaped median spot of black, and many of the feathers of the flanks are similarly marked. "Iris dark brown; feet leaden gray, lower parts of webs black; tip of bill [for about 1 inch] black; [rest of] bill fleshy white; orbital skin black; gular pouch light green." (Abbott, MS.)

Total length (skin), about 28 inches; wing, 18; tail, 8.40, outer feathers 3.20 shorter; culmen, 4.40; depth of bill at base (in front of lores), 1.65, width at same point, 1.22; tarsus, 2; middle toe, 3.50.

This fine species is a little larger than *S. eyanops*, and of similar general appearance, but differs very much both in form and coloration. The bill is much heavier than in that species, for while but little longer it is altogether deeper and broader through the base. The serrations of the tomia are also much coarser. The tarsus is decidedly shorter, but the toes much longer, than in *S. eyanops*, and the covering of both legs and feet is far rougher than in that or any other species of the genus. As to coloration, the most conspicuous features are the sharply defined wedged-shaped black markings on a pure white ground, on the upper tail-coverts and flanks, the extensively white inner webs of the remiges, and the positively black, instead of brown, general color of wings and tail. Wherever the white and the black come into juxtaposition there is always a bold line of junction, and in no case a gradual shading together of the two colors.

"Creole name, *Fou bæuf*." A few breed on Assumption. Said not to be found on any other island in these seas." (Abbott, MS.)

Judging from the description in Taczanowski's *Ornithologie du Pérou*,¹

¹ Vol. III, p. 433.

S. variegata, Tschudi, of the coast of Peru, somewhat resembles this species in coloration, having, like it, the flanks (also the back) spotted with black, and the inner webs of the remiges and rectrices white basally; but *S. variegata* is a bird of very different proportions, having a very slender bill (like that of *S. nehouxi*) and proportionally more graduated tail, with much narrower and more pointed feathers, besides being considerably smaller in all its dimensions.

Just what differences of coloration exist between adults of the two species I am not able to state, since the single specimen of *S. variegata* which I have been able to examine is an immature bird.

Comparative measurements of Sula abbotti, S. cyanops, S. nehouxi, and S. variegata.

| Species. | Number of specimens measured. | Wing. | Tail. | Culmen. | Tarsus. | Middle toe. | Width of bill at base. | Depth of bill at base. |
|-----------------------|---------------------------------|----------------|---------------------------|----------------|----------------|----------------|------------------------|------------------------|
| | | <i>Inches.</i> | <i>Inches.</i> | <i>Inches.</i> | <i>Inches.</i> | <i>Inches.</i> | <i>Inches.</i> | <i>Inches.</i> |
| <i>S. abbotti</i> ... | One..... | 18.00 | 8.40 3.20 ¹ | 4.40 | 2.00 | 3.50 | 1.22 | 1.65 |
| <i>S. cyanops</i> .. | Eight (average)..... | 16.92 | 7.00 3.25 | 3.96 | 2.19 | 3.01 | 1.07 | 1.45 |
| <i>S. nehouxi</i> .. | Seven (average)..... | 16.73 | 8.96 4.39 | 4.20 | 2.07 | 2.87 | .94 | 1.25 |
| <i>S. variegata</i> . | One (immature, but full grown). | 14.50 | 6.45 2.75 | 3.58 | 1.90 | 2.40 | .82 | 1.15 |

¹The second measurement indicates the difference in length between the longest and shortest rectrices.

Family FREGATIDÆ.

7. FREGATA AQUILA MINOR (Gmelin).

No specimens.

Family PHAËTONTIDÆ.

8. PHAËTON RUBRICAUDUS, Boddaert.

One specimen. September 18.

“Breeds on Assumption and Gloriosa. Nests on the ground in dense thickets or under a bush.” (Abbott. MS.)

Family COLUMBIDÆ.

9. TURTUR ALDABRANUS, Sclater?

No specimens.

Family CUCULIDÆ.

10. CENTROPUS INSULARIS, Ridgway.

Centropus insularis, RIDGWAY. Proc. U. S. Nat. Mus., XVII. 1894, p. 373 (Assumption Island: U.S.N.M.).

Specific characters.—Quite identical in nuptial plumage with *C. toulou* (Müller); in other plumages, however, very much paler, the posterior under parts barred with pale brownish buff and dusky, in nearly equal quantity (uniform greenish dusky in corresponding plumage of *C. toulou*).

Habitat.—Aldabra and Assumption islands. (Type, No. 128715, U.S.N.M., female, adult, Aldabra, October, 1892. "Upper mandible horny brown; lower pale horny; irides red; feet bluish black." (Abbott, MS.)

Measurements vary so, both in this form and in *C. toulou*, that I have been unable to derive any satisfactory character from them. The present bird appears, however, to have almost invariably smaller feet than *C. toulou*, as the following measurements show:

Measurements of Centropus toulou.

| Museum number. | Sex and age. | Locality. | Date. | Wing. | Tail. | Culmen. | Depth of bill. | Tarsus. | Outer toe. |
|---------------------------|--------------|--------------|-------|---------|---------|---------|----------------|---------|------------|
| | | | | Inches. | Inches. | Inches. | Inches. | Inches. | Inches. |
| A. N. ¹ | Male ad .. | Madagascar. | 1873 | 6.55 | 9.60 | 1.32 | 0.63 | 1.65 | 1.20 |
| 118599 ² | Female ad .. |do..... | | 5.85 | 9.50 | 1.28 | .65 | 1.65 | 1.15 |
| A. N. ¹ | Female ad .. |do..... | | 6.45 | 8.70 | 1.30 | .60 | 1.47 | 1.17 |
| A. N. ¹ | |do..... | 1879 | 5.85 | 9.20 | 1.17 | .52 | 1.50 | .98 |

¹ Cabinet of Alfred Newton.

² U. S. N. M.

Measurements of Centropus insularis.

| U. S. N. M. | Sex and age. | Locality. | Date. | Wing. | Tail. | Culmen. | Depth of bill. | Tarsus. | Outer toe. |
|-------------|--------------|--------------|----------|---------|---------|---------|----------------|---------|------------|
| | | | | Inches. | Inches. | Inches. | Inches. | Inches. | Inches. |
| 128717..... | Male ad .. | Aldabra..... | Nov. 18 | 5.95 | 9.35 | 1.10 | 0.50 | 1.32 | 1.00 |
| 128714..... | Female ad .. |do..... | Sept. 25 | 6.70 | 10.25 | 1.30 | .60 | 1.50 | 1.13 |
| 128716..... | Male ad .. |do..... | Oct. 4 | 6.00 | 9.75 | 1.12 | .55 | 1.43 | 1.05 |
| 128715..... | Female ad .. |do..... | Oct. 3 | 6.60 | 10.80 | 1.20 | .60 | 1.50 | 1.12 |
| 128712..... | Male ad .. | Assumption. | Sept. 18 | 5.85 | 8.70 | 1.10 | .55 | 1.45 | 1.03 |

Family NECTARINIDÆ.

11. CINNYRIS ABBOTTI, Ridgway.

Cinnyris abbotti, RIDGWAY, Proc. U. S. Nat. Mus., XVII, 1894, p. 372 (Assumption Island; U.S.N.M.).

Specific characters.—Similar to *C. aldabrensis*, but with under parts posterior to maroon-bay pectoral band almost entirely sooty black, with flanks more or less extensively light yellowish gray; upper tail-coverts glossy violet-black, tipped with metallic greenish blue. Female similar to that of *C. aldabrensis*.

Habitat.—Assumption Island. (Type, No. 128680, U.S.N.M., male adult, Assumption Island, September 18, 1892; Dr. W. L. Abbott.)

Measurements of type.—Length (skin), 3 inches; wing, 2.22; tail, 1.62; exposed culmen, 0.70; tarsus, 0.67; middle toe, 0.40.

Four specimens, September 18.

Family CORVIDÆ.

12. CORVUS SCAPULATUS, Daudin.

One specimen, September 18.

VIII.—BIRDS FROM GLORIOSA ISLAND.

Family LARIDÆ.

1. STERNA BERNSTEINI, Schlegel.

One specimen, January 29.

2. STERNA MEDIA, Horsfield.

One specimen, January 25.

3. STERNA FULIGINOSA, Gmelin.

Three specimens, January 23–February 1.

4. STERNA MELANAUCHEN, Temminck.

No specimens.

Family DROMADIDÆ.

5. DROMAS ARDEOLA, Paykull.

No specimens.

Family ARENARIIDÆ.

6. ARENARIA INTERPRES (Linnæus).

No specimens.

Family SCOLOPACIDÆ.

7. TOTANUS NEBULARIUS (Gunnerus).

No specimens.

8. NUMENIUS PHÆOPUS (Linnæus).

No specimens.

Family ARDEIDÆ.

9. ARDEA CINEREA, Linnæus.

No specimens.

Family SULIDÆ.

10. SULA CYANOPS, Sundevall.

One specimen, February 1. "Breeds in considerable numbers on the neighboring Ile de Lise." (Abbott, MS.)

11. SULA PISCATOR (Linnæus).

Three specimens, January 18–26.

Only the gray, white-tailed plumage of this species seems to have been seen on Gloriosa. "Very common upon Gloriosa, nesting upon 'Fouche' trees, 15 to 20 feet from the ground. At the time of my visit they were building their nests and some had already laid eggs. They were by far the commonest species of booby on the island." (Abbott, MS.)

Family FREGATIDÆ.

12. FREGATA AQUILA MINOR (Gmelin)?

Since no specimens were collected and as Dr. Abbott did not distinguish between the two species, it is uncertain whether the Frigate birds observed at Gloriosa were this form or *F. ariel*, Gould. (See under *Amirantes*, page 516.)

Family PHAËTONTIDÆ.

13. PHAËTON RUBRICAUDUS, Boddaert.

One specimen, January 23.

Family PHASIANIDÆ.

14. GALLUS FERRUGINEUS, Gmelin, variety.

No specimens.

"The common fowl has become wild and is plentiful in the jungle upon Gloriosa. They are quite shy and by no means easy to shoot. The crowing of the cocks, continually heard in all directions, gives evidence of their numbers. They show little tendency toward reversion to the original jungle-fowl type, varying much in color, though probably the 'red dunghill' cock and brown hen with yellow legs predominate. The length of the spurs of some of the cocks is remarkable." (Abbott, MS.)

Family COLUMBIDÆ.

15. TURTUR COPPERINGI, Sharpe.

One specimen, January 25.

Family BUTEONIDÆ.

16. MILVUS ÆGYPTIUS (Gmelin).

No specimens.

Family CORACIIDÆ.

17. EURYSTOMUS GLAUCURUS (Müller).

No specimens.

Family "TIMELIIDÆ."

18. IXOCINCLA MADAGASCARIENSIS ROSTRATA, Ridgway?

Three specimens, January 18-26.

"Not common. Has an entirely different note to that of its near relative of Aldabra. All the specimens obtained were in extremely worn plumage."¹ (Abbott, MS.)

Owing to their bad condition of plumage, I have not been able to make out satisfactorily whether the Gloriosa and Aldabra birds of this species are really different or not.—R. R.

Family HIRUNDINIDÆ.

19. CLIVICOLA RIPARIA (Linnæus).

One specimen, January 29. "Not common." (Abbott, MS.)

Family NECTARINIIDÆ.

20. CINNYRIS SOUIMANGA (Gmelin)?

Four specimens, January 18-29. "Common in Gloriosa. A very few were nesting at the time of our visit." (Abbott, MS.)

Family MELIPHAGIDÆ.

21. ZOSTEROPS MADAGASCARIENSIS GLORIOSÆ, Ridgway.

Zosterops madagascariensis gloriosa, RIDGWAY, Proc. U. S. Nat. Mus., XVII, 1894, p. 372, (Gloriosa Island), U.S.N.M.

Subspecific characters.—Very similar to true *Z. madagascariensis* (Gmelin), but larger (?), upper parts less vivid olive-green, and under tail-coverts brighter yellow.

Habitat.—Gloriosa Island. (Type, No. 128706, U.S.N.M., female adult, Gloriosa Island, January 25, 1893; Dr. W. L. Abbott.)

Measurements of type.—Length (before skinning), 4.50 inches; wing, 2.17; tail, 1.42; exposed culmen, 0.40; tarsus, 0.65; middle toe, 0.38. "Bill black; base of lower mandible leaden; irides pale brown; feet leaden." (Abbott, MS.)

Having only one specimen of true *Z. madagascariensis* for comparison, I am not quite satisfied of the propriety of separating the Gloriosa bird, which I do more in deference to Professor Newton's views than to my own convictions.

Four specimens, January 18-25. "Is the commonest land bird upon Gloriosa." (Abbott, MS.)

Family CORVIDÆ.

22. CORVUS SCAPULATUS, Daudin.

No specimens.

IX.—BIRDS FROM ALDABRA ISLAND.

Family LARIDÆ.

1. STERNA BERNSTEINI, Schlegel.

No specimens. "Common." (Abbott, MS.)

2. STERNA FULIGINOSA, Gmelin.

No specimens. "Wide-awake;" rare in Aldabra, but vast numbers breed on Ile Lise, close to Gloriosa Island." (Abbott, MS.)

3. STERNA MELANAUCHEN, Temminck.

One specimen, November 29. "Common." (Abbott, MS.)

4. ANOUS STOLIDUS (Linnæus).

One specimen, October 15. "Creole name, 'Maqua;' common, breeding in thousands on small islets in the lagoon." (Abbott, MS.)

5. GYGIS ALBA (Sparrmann).

Two specimens, October 9. "Creole name, 'Gaulin'; common." (Abbott, MS.)

Family DROMADIDÆ.

6. DROMAS ARDEOLA, Paykull.

Two specimens, October 8 and November 5. "Creole name, 'Cavalier.' In large flocks along the shore and in the lagoon. Also found on Gloriosa Island, the Seychelles, and Providence Bank." (Abbott, MS.)

Family CHARADRIIDÆ.

7. ÆGIALITIS GEOFFROYI (Wagler).

Three specimens, October 6–November 8. "Rather common." (Abbott, MS.)

Family ARENARIIDÆ.

8. ARENARIA INTERPRES (Linnæus).

Four specimens, October 5–November 10. "Creole name *Alouette*. Very common in all the islands visited." (Abbott, MS.)

Family SCOLOPACIDÆ.

9. ACTITIS HYPOLEUCOS (Linnæus).

One specimen, October 6. "Creole name 'Baise roche.' Not common in Aldabra." (Abbott, MS.)

10. TRINGA FERRUGINEA, Brünnich.

Two specimens, November 6. "A small flock met with in the lagoon." (Abbott, MS.)

11. TOTANUS GLAREOLA (Linnæus).

One specimen, December 17. "A rather scarce species." (Abbott, MS.)

12. TOTANUS NEBULARIUS (Gunnerus).

One specimen, November 6.

13. CALIDRIS ARENARIA (Linnæus).

Four specimens, October 3–November 10. "Common." (Abbott, MS.)

14. NUMENIUS ARQUATA MADAGASCARIENSIS (Linnæus).

No specimens. "Not common." (Abbott, MS.)

15. NUMENIUS PHÆOPUS (Linnæus).

Three specimens, September 22–October 6. “Common, also at Gloriosa Island.” (Abbott, MS.)

Family RALLIDÆ.

16. DRYOLIMNAS ALDABRANUS (Günther).

[*Rougetius aldabranus*, RIDGWAY, Proc. U. S. Nat. Mus., XVI, 1893, p. 598 (Aldabra Island; U.S.N.M.).]

Specific characters.—Similar to *D. abbotti*, of Assumption, but without trace of dusky streaks on dorsal region, and with white bars on belly and flanks much less distinct (sometimes almost wanting).

No. 128835, U.S.N.M., Aldabra Island, October 10, 1892; Dr. W. L. Abbott. Length (before skinning), 12.50 inches; “irides chestnut brown; feet blackish brown; bill black; base pink.”

Eight adults from Aldabra compared with four from Assumption Island agree in the above-mentioned characters. In the specimen (No. 128835) there is scarcely a trace of white bars on the abdomen, while those on the flanks and thighs are nearly obsolete. Other specimens, however, have these markings well developed, though never so broad and distinct as in *D. abbotti*, while in none of them is there even a trace of the blackish streaks on the back, which are very conspicuous in all the birds from Assumption.

“Very common on all the islets of the Aldabra group, abounding on even the smallest, which do not contain more than half an acre, excepting Grand Terre, where it has been exterminated by the cats, which run wild there. Excessively tame and unsuspecting as well as inquisitive, they run up to inspect any stranger who invades their habitat, occasionally even picking at his toes. Each pair seem to reserve a certain area of jungle for their own use and chase off all intruders of their own kind. They are very noisy, particularly in the mornings and evenings. The most common note is a clear short cry, or rather whistle, repeated twelve or fifteen times. While whistling the bird stands erect with his neck full length and bill elevated, seemingly greatly enjoying his own musical performance. Often a pair joins in a duet, the male and female standing close together facing each other. Another note is a sort of squeak and appears to be a sign of anger. They also make a series of short grunts, which seems to be a love note and is also used in calling up their young. These birds fight among themselves quite fiercely, flying at each other like game cocks. One frequently gets the other on his back, pinning him down and pecking at him. The battle is quickly decided and the vanquished gets up and runs away pursued by the conqueror, who, however, soon halts and drawing himself up to his full height whistles a paean of victory. They do not seem to inflict much injury upon each other in these combats. Their food is anything organic that they can pick up; they never scratch like fowls, but poke around among the dry leaves with their bills. The few people who lived

upon Aldabra told me that the rails were very destructive in the gardens and also ate the fowls' eggs, but so far as I myself observed they do no damage whatever. They are extremely quick in their movements, darting and dodging about the jungle with great activity. They are not absolutely flightless, but use their wings to assist them in leaping, being able to jump and flutter from 2 to 5 feet off the ground. In the open they can easily be caught by a man, but once in the jungle no terrier can catch them.

"On my first arrival in Aldabra, in September, a few pairs were breeding, but the majority did not breed until November and December, when a heavy rainfall occurred. Sometimes the nest is placed in a shallow cavity in the coral rock, being simply a few dry leaves and sticks; sometimes it is a large loose mass as big as a half bushel basket, a foot or two from the ground and placed in a dense tangle of grass and euphorbia. In this case the cavity is very deep, only the head being visible as the bird sits upon her eggs. The number of eggs laid, as a rule, is three; one nest contained four; some were said to sometimes contain more, but I did not meet with any. I was unable to ascertain the period of incubation or to obtain any very young specimens. The hen sits very closely and can scarcely be driven off her eggs, returning immediately on the departure of the intruder.

"I am told that rails swarm upon the Cosmoledo Atoll and on Astove, about sixty miles eastward from Aldabra. I fear that they are doomed to early extinction on Aldabra from the wild cats which will eventually reach the other islands of the group or be introduced from Grand Terre." (Abbott, MS.)

Family PHŒNICOPTERIDÆ.

17. PHŒNICOPTERUS ERYTHRÆUS, J. Verreaux (?)

Five specimens, October 21-28.

These specimens are very doubtfully referred to *P. erythræus*, since in several respects they do not agree with any description of that form which I have been able to consult. For example, the plumage of the head, neck, and greater part of the body is white, or pinkish white, and not rose color or rose-red, as given in descriptions of *P. erythræus*. They certainly are not *P. antiquorum*, with good specimens of which I have been able to compare the Aldabra birds; and they agree even less with descriptions of *P. minor* than with those of *P. erythræus*.

"Creole name, '*Flammant*.' Resident and doubtless breed. Inhabit the south and east sides of the lagoon of Aldabra in flocks of twenty to sixty individuals. There are altogether probably from five hundred to a thousand in the island. They are found in no other island of these seas except Madagascar. The lagoon is bordered by mangrove swamps and wide stretches of mud flats bare at low tide, affording the flamingoes a capital place of residence. They seem to be rarely seen in any other part of the island." (Abbott, MS.)

Family IBIDIDÆ.

18. IBIS ABBOTTI, Ridgway.

Ibis abbotti, RIDGWAY, Proc. U. S. Nat. Mus., XVI, 1893, p. 599 (Aldabra Island; U.S.N.M.).

Specific characters.—Similar to *I. bernieri*, as distinguished from *I. athiopica*, but lower neck naked and minutely papillose; remiges without dark-colored tips (blackish gray in *I. bernieri*, dark metallic green in *I. athiopica*); decomposed tertials greenish blue on outer, grayish green on inner, webs, and iris light blue instead of white.

Type.—No. 128812, U.S.N.M., female adult, Aldabra Island, October 8, 1892; Dr. W. L. Abbott.

This bird is separated from *I. bernieri* (Bonaparte) with some doubt, but there can be no question as to its distinctness from *I. athiopica*, Latham. It agrees with *I. bernieri*, and differs from *I. athiopica* in the slender bill, light-colored iris, and lack of purple hue to the decomposed tertials; but it differs from *I. bernieri*, as described, in having the lower half of the neck (except extreme lower portion) entirely naked and minutely papillose; the iris light blue instead of white; *the remiges without dark-colored tips* (dark metallic green in *I. athiopica*, blackish gray in *I. bernieri*), and the decomposed tertials greenish blue on the outer, and grayish green on the inner, webs.

In view of the probability that it may prove to be a local insular form, I have proposed for it the name *Ibis abbotti*.

The fresh colors of the unfeathered parts, as recorded on the label, are as follows: "Bill black; feet black; tarsi with a reddish tinge; iris light blue; bare skin on under side of wings dull red." Length (before skinning), 27 inches.

"Creole name, '*Corbijean blanc*.' Common and extremely tame. A half dozen birds lived constantly about the camp, feeding upon scraps and turtle offal." (Abbott, MS.)

Family ARDEIDÆ.

19. ARDEA CINEREA, Linnæus.

One specimen, October 15.

"Creole name '*Florentin*.' Common, and breeds upon islets in the lagoon. Saw nests with young birds in them in November. It is also found in Providence Island and the Amirantes. Stragglers are said to visit the Seychelles occasionally." (Abbott, MS.)

20. DEMIGRETTA GULARIS (Bosc.)

Two specimens in dark-colored plumage, October 15 and November 10; two in white plumage, October 11 and December 20.

"This is the commonest heron in Aldabra. Two forms exist, but I do not know their relationships. It is probably a case of dimorphism

(*dichromatism*). The white form is twice or thrice as numerous as the blue; many of the blue ones have white heads or white heads and necks. The Creoles say that the blue ones are the females, and the blue ones obtained were all females, but I have shot white females. Most commonly a white and a blue bird were paired, sometimes both were white, but in no case were two blue ones mated. They were breeding in large numbers in December, building their loose platforms of sticks among the mangroves, and laying from two to four eggs.

"At low tide this and other species of herons, with curlews and sandpipers, feed upon the fringing reef in thousands; then as the tide rises the whole crowd fly over into the lagoon, where the tide is one or two hours later, and continue feeding there until the water becomes too deep." (Abbott, MS.)

21. BUTORIDES ATRICAPILLUS (Afzelius).

One specimen, October 19.

"Creole name, '*La gasse*' or '*Maneck*.' Quite common; breeding among the mangroves in November and December, laying two eggs. Both this and the egrets are very tame and come around the camp and turtle slaughtering place to pick up scraps. They are extremely fond of bluebottle flies, which swarm upon the backs and heads of the turtles when on shore. They stand by hours upon the turtle's back, darting out their beaks with unerring aim upon the blood-sucking flies." (Abbott, MS.)

22. BUBULCUS BUBULCUS (Savigny).

"Apparently the 'buffalo bird' of Africa. Only one noticed in Aldabra. It lived most of the time in the pens with the goats and pigs. Very plentiful in Coëtivy and the Amirantes. Creole name, *Madame Patou*." (Abbott, MS.)

Family SULIDÆ.

23. SULA PISCATOR (Linnæus).

One specimen, October 20.

"Creole name, '*Fou bête*.' Very abundant, probably from fifty to one hundred thousand individuals of this species make their homes in Aldabra. It is common also in Gloriosa and the Amirantes. Formerly it was found upon every island of these seas, but is now exterminated upon many of them.

"At the time of my visit to Gloriosa Island, in the latter part of January, they were building their nests and some already had eggs. The nest is built in '*Fouche*' trees at the height of from 15 to 20 feet from the ground. They were by far the commonest booby upon the island. Upon the neighboring Ile de Lise '*Generaux*' or *Sula cyanops* bred in considerable numbers.

"The boobies lead a hard life of it from the persecution of the frigate birds. These circle around in thousands during the day, awaiting

the arrival of the flocks of boobies at evening, heavily laden with fish. The old boobies and the 'Capucins' generally escape, but the young birds, still in the gray dress, are the especial objects of pursuit by the frigates, who nearly always succeed in getting their fish from them. The air is filled with the screams and cries of the pursuers and pursued." (Abbott, MS.)

The brown phase of this species, known to the Creoles as the *Capucin*, was, according to Dr. Abbott's notes, represented by a few pairs on Aldabra, but on Gloriosa Island bred in considerable numbers.

Family FREGATIDÆ.

24. FREGATA AQUILA MINOR (Gmelin.)

Three specimens, October 11-13.

"Very common. Breeding in colonies of many thousands in the mangroves. Also abundant in Gloriosa. Found eggs to be plentiful in November. Some of the birds seen appear to be the greater frigate, but there seems to be all gradations of size between the two forms. On February 10, 1893, when off the *Amirantes*, I observed several frigates and boobies catching flying fish, which were flying about in great numbers, pursued by shoals of bonito. The boobies were by far the most expert, rarely missing a fish, while the latter generally succeeded in escaping from the frigates, either by outflying them or else by dropping back into the water just as the frigate came up with them." (Abbott, MS.)

Family PHAËTONIDÆ.

25. PHAËTON CANDIDUS, Drapiez.

One specimen, October 24.

"Creole name, '*Paille en queue*.' Breeds in holes in the coral rock in November. Lays one egg, placed on the bare ground." (Abbott, MS.)

Family COLUMBIDÆ.

26. TURTUR ALDABRANUS, Sclater.

Six specimens, September 30-November 18.

"Very common, especially on Ile Picard, and extremely tame. Coming by hundreds around the house, even coming in doors and eating out of one's hand. Builds among the mangroves, where several nests were found." (Abbott, MS.)

27. ALECTRÆNAS SGANZINI (Verreaux).

Six specimens, October 3-December 8.

"This species, similar or identical with that of Madagascar, does not appear to be very common. Its presence or absence is regulated by the supply of food, being especially attracted by the hard fleshy fruit

of the 'Touche' bush. They are extremely tame and stupid and can almost be caught in the hand. They will sit quiet on a branch for hours and are easily snared with a noose. This habit accounts for the extermination of their near relative in Mauritius. Generally excessively fat. Their voice is a very hoarse and deep *coo*." (Abbott, MS.)

Family BUTEONIDÆ.

28. MILVUS ÆGYPTIUS (Gmelin).

Two specimens, October 2 and December 19. "Kites are occasionally observed, but are not common, probably only wanderers from Madagascar or the Comoro Islands." (Abbott, MS.)

Family FALCONIDÆ.

29. TINNUNCULUS NEWTONI, Gurney.

Five specimens, October 19–November 7.

"This is not a very common species, only about twenty individuals being observed during my stay of three months in Aldabra. They appear to be most common in the bare and stony interior of Grand Terre, Aldabra, particularly near the water hole at Tâta máca." (Abbott, MS.)

Family STRIGIDÆ.

30. STRIX FLAMMEA ———?

Four specimens, October 4–December 12.

In the absence of sufficient material for comparison, I am unable to determine the subspecies to which these specimens belong. They are very different from an example from Angola (*S. poensis*, Fraser?), the only African Barn Owl in the U. S. National Museum collection, but resemble very closely in coloration *S. f. delicatula*, from Australia, Samoa, etc. They are much larger, however, than the latter.

"This owl is rather common. Its cry is frequently heard at night, and is almost identical with that of the American variety. Occasionally seen in the day time." (Abbott, MS.)

Family CUCULIDÆ.

31. CENTROPUS INSULARIS, Ridgway.¹

Four specimens, September 25–November 18.

"A common and extremely tame species both in Aldabra and Assumption. Very fond of lizards and, it is said, also of rats. While I did not actually see them capture any of the latter, I believe that they do catch small ones. This bird has two notes, one like *Hoo-hoo-hoo-hoo*—

¹ See also p. 522.

hoo-hoo-hoo-hoo, high at first, then diminishing lower and lower in tone; it also has a short harsh call note, frequently repeated. Breeds in December, constructing a large oval nest, the size of a peck measure, with the entrance in one end. It is very loosely made of strips of bark, grass, and cocoanut leaves, when they are available, and is placed in a bush five to eight feet from the ground. The number of eggs is three or four, white in color." (Abbott, MS.)

Family CAPRIMULGIDÆ.

32. CAPRIMULGUS ALDABRENSIS, Ridgway.

Caprimulgus aldabrensis, RIDGWAY, Proc. U. S. Nat. Mus., XVII, 1894, p. 373 (Aldabra Island; U. S. N. M.).

Specific characters.—Similar to *C. madagascariensis*, Grandidier, but averaging larger; scapulars marked with grayish white instead of buff; foreneck without collar of buffy spots, and white of tail more extensive (that on lateral feathers extending 1.70 inches from tip in adult male).

Habitat.—Aldabra Island. (Type No. 128668, U.S.N.M., male adult, Aldabra Island, September 29, 1892, Dr. W. L. Abbott.)

Measurements of type.—Length (before skinning), 9.25 inches; wing, 6.25; tail, 4.35; middle toe, 0.65.

"Creole name, '*Sommeil*.' Very common, generally remaining in the jungle during the day, but numbers come around the houses in the evening, being particularly attracted by the swarms of beetles about the bone heaps where the turtles are slaughtered. Breeds on the open sand hills, on the bare ground, in September. Did not find any eggs, but found a nest containing two young.

"This bird has three notes. In the dusk of evening the first call is heard—*kŭ-wŭh'*, *kŭ-wŭh'*, with the accent strongly on the last syllable. After dark the note heard is *clŭk-tŭ-tŭ-tŭ-tŭ* frequently repeated. This sound is rather that of clucking than 'tu-tu,' etc., but can not be more nearly expressed in words. The third sound made by the bird is a sort of *winnowing* similar to the sound made by *Scops asio*. This last is rarely heard." (Abbott, MS.)

Family CORACIIDÆ.

33. EURYSTOMUS GLAUCURUS (Müller).

One specimen, December 10.

"A roller was shot on Ile Picard. I did not see any others, but one of my men, who had lived several years on Aldabra, told me he had several times seen them." (Abbott, MS.)

Family MICROPODIDÆ.

34. MICROPUS APUS (Linnæus).

One specimen, December 1. "One specimen shot on Ile Picard, doubtless a straggler." (Abbott, MS.)

35. "COLLOCALIA, Sp.?"

A swift, apparently of this genus, observed several times, but none were shot." (Abbott, MS.)

Family "TIMELIIDÆ".

36. IXOCINCLA MADAGASCARIENSIS ROSTRATA, Ridgway.

Ixocincla madagascariensis rostrata, RIDGWAY, Proc. U. S. Nat. Mus., XVI, 1893, p. 597 (Aldabra Island; U.S.N.M.).

Subspecific characters.—Similar to true *I. madagascariensis* (Müller), but larger, the bill especially, and coloration paler.

Habitat.—Aldabra and Gloriosa islands.

Type.—No. 128658, U.S.N.M., male adult, Aldabra Island, October 2, 1892; Dr. W. L. Abbott. Length (before skinning), 9 $\frac{5}{8}$ inches; wing, 4.50; tail, 4; exposed culmen, 0.82; depth of bill through nostril, 0.28; tarsus, 0.86; middle toe, 0.65. "Bill orange-red, tip black; feet fleshy brown." (Abbott, MS.)

"A common species in the jungle, very noisy and quarrelsome. It has a large variety of notes and noises, one of which is like the autumn call note of the American robin. A few were found breeding in December. Nests were placed in the tops of shrubs in the jungle about 8 feet from the ground. Only two eggs were found in any nest, but they possibly lay more." (Abbott, MS.)

Family MOTACILLIDÆ.

37. MOTACILLA CAMPESTRIS, Pallas.

One specimen, December 20. "A single specimen shot on Ile Picard."

Family MUSCICAPIDÆ?

38. MUSCICAPA, sp. (?).

"A small gray flycatcher about 6 inches long, with white rump, noticed at North Island (Aldabra) in December, but was not shot. Doubtless a visitor from Africa or Madagascar." (Abbott, MS.)

Family HIRUNDINIDÆ.

39. PHEDINA BORBONICA (Gmelin)?

One specimen, November 19.

This species is identified with great doubt as *P. borbonica*, but the descriptions of this and *P. madagascariensis* in the British Museum catalogue,¹ as well as in Hartlaub's *Die Vögel Madagascars*,² are so unsatisfactory that I am unable to decide to which the Aldabra bird should

¹ Vol. X, pp. 122, 123.

² Pp. 63-66.

be referred. Geographical considerations would favor its being *P. madagascariensis*; but the descriptions, so far as they indicate any difference between the two supposed species, rather point to its being *P. borbonica*.

40. CLIVICOLA RIPARIA (Linnæus).

One specimen, December 2. "One specimen shot on Ile Picard; several seen on Gloriosa Island." (Abbott, MS.)

Family NECTARINIIDÆ.

41. CINNYRIS ALDABRENSIS, Ridgway.

Cinnyris aldabrensis, RIDGWAY. Proc. U. S. Nat. Mus., XVII, 1894, p. 372 (Aldabra Island; U.S.N.M.).

Specific characters.—Similar to *C. souimanga* (Gmelin), but pectoral band much broader and bright maroon-bay instead of chestnut; sooty breast-patch much more extensive, reaching, medially, to middle of belly; sides and flanks light yellowish gray, and lower belly very pale sulphur yellow (whole belly canary yellow in *C. souimanga*). Female much grayer above and darker below, anteriorly, than that of *C. souimanga*.

Habitat.—Aldabra Island. (Type, No. 128673, U.S.N.M., male adult, Aldabra Island, October 1, 1892; Dr. W. L. Abbott.)

Measurements of type.—Length (before skinning), 4.36 inches; wing, 2.10; tail, 1.50; exposed culmen, 0.70; tarsus, 0.65; middle toe, 0.40. "Bill and feet black." (Abbott, MS.)

"This, the commonest bird in Aldabra, is found in all localities. Like all other birds of the islands, it is extremely tame and unsuspecting, even alighting on one's arm. It breeds from September to January, possibly longer and at other seasons. More than one brood is raised, but I do not know how many. The female alone performs the labor of nest building and incubation; the male, however, assists in feeding the young. The nest is suspended from a branch of mangrove or of a 'baluchi' bush near the shore; a favorite situation being to fasten it to a stalk of grass or euphorbia hanging in one of the great pits or chasms so numerous in the coral rock of Aldabra. The nest is neatly constructed of fibers of bark, generally mangrove. The female selects a suitable hanging leaf or branch and attaches some fibers of bark firmly to it; other fibers are then attached to this until an oval mass is formed; this is then opened out by the bird entering her head and then her body into the mass. More material is now added to the outside, the bird occasionally entering the cavity and enlarging it by kicking and fluttering; finally the inside is lined with feathers. The construction of the nest occupies about eight days. Two eggs are laid and the period of incubation is thirteen days. The young are born blind, but open their eyes on the seventh day.

"The male has a very sweet song, reminding one of the American house wren, *Troglodytes ædon*." (Abbott, MS.)

Family MELIPHAGIDÆ.

42. ZOSTEROPS ALDABRENSIS, Ridgway.

Zosterops aldabrensis, RIDGWAY, Proc. U. S. Nat. Mus., XVII, 1894, p. 371 (Aldabra Island; U.S.N.M.).

Specific characters.—Similar to *Z. palpebrosa* (Temminck), but supraloral region (sides of forehead) distinctly orange-yellowish, under parts with yellow of chest extending farther backward and tinging the median line of the belly; chest and sides less tinged with gray (some specimens having instead a faint brownish wash), and under tail-coverts very different in color from chest (varying from maize- to chrome-yellow, the throat being canary yellow).

Habitat.—Aldabra Island. (Type, No. 128702, U.S.N.M., male adult, Aldabra Island, October 3, 1892; Dr. W. L. Abbott.)

Measurements of type.—Length (before skinning), 4.25 inches; wing, 2.12; tail, 1.62; exposed culmen, 0.35; tarsus, 0.70; middle toe, 0.37. "Upper mandible black; lower leaden; feet leaden; irides light brown." (Abbott, MS.)

"A very common, active little bird, generally keeping in the thick jungle and constantly hopping about the branches. Found in flocks of twenty to thirty and very fond of the seeds of the casuarina tree. One nest was taken in October, but they breed plentifully in December. The nest is neatly constructed of bark fiber and casuarina needles, usually placed in a bush six feet from the ground in thick jungle. Two pale green eggs are laid." (Abbott, MS.)

Family CORVIDÆ.

43. CORVUS SCAPULATUS, Daudin.

Two specimens, October 30 and November 1.

"Not common on either Aldabra or Assumption. Shyer and more wary than any other bird on these islands. Plentiful on Gloriosa Island, where they are very destructive to the eggs of 'boobies' and other birds." (Abbott, MS.)

Family DICRURIDÆ.

44. BUCHANGA ALDABRANA, Ridgway.

Buchanga aldabrana, RIDGWAY, Proc. U. S. Nat. Mus., XVI, 1893, p. 597 (Aldabra Island; U.S.N.M.).

Specific characters.—Differing from *B. atra* (Hermann) in larger and more strongly hooked bill, much longer nasal plumes (reaching half way from nostrils to tip of bill), much narrower rectrices, and in the very pale coloration of the female.

Type.—No. 128719, U.S.N.M., adult male, Aldabra Island, October 8, 1892; Dr. W. L. Abbott: Entirely black, glossed with greenish blue, the

remiges and rectrices much duller, more brownish, and very faintly glossed. "Irides red, bill and feet black." Length (before skinning), 11.25 inches; wing, 5.30; tail, 5.55; middle feathers, 4.20; culmen (from extreme base), 1.15; depth of bill through nostril, 0.38; tarsus, 0.92; middle toe, 0.60.

No. 128722, adult female, same locality and collector, October 2, 1892: Above dull slate gray, the margins of the feathers on forehead and hind neck and lower part of rump approaching grayish white; wing-coverts dull greenish slate, indistinctly edged with dull brownish white; remiges and rectrices dull grayish brown, edged with paler. Under parts grayish white, the feathers of the breast, belly, etc., dusky grayish beneath the surface; under wing coverts almost wholly pure white. Bill, legs, and feet black; "irides reddish brown." Length (before skinning), 9.75 inches; wing, 4.80; tail, 4.80; middle feathers, 4.08; culmen (to concealed base), 1.12; depth of bill through nostril, 0.38; tarsus, 0.90; middle toe, 0.60.

Immature males are variously intermediate in color between the adult male and adult female.

The collection contains three adult males, two immature males, and one adult female, representing dates from October 2-19, inclusive.

"Common, noisy, and quarrelsome, pursuing frigate birds, crows, and other large birds that approach their nests. Breeds in November and December, laying three or four eggs. A favorite situation is on the branch of a casuarina tree. The nest is open, rather flat, and firmly and neatly constructed of casuarina needles and some spider webs." (Abbott, MS.)

Family PLOCEIDÆ.

45. FOUDIA ALDABRANA, Ridgway.

Foudia aldabrana, RIDGWAY. Proc. U. S. Nat. Mus., XVI. 1893, p. 598 (Aldabra Island); U.S.N.M.

Specific characters.—Similar to *F. madagascariensis* (Linnaeus), but very much larger.

Type.—No. 128692, U.S.N.M., adult male, Aldabra Island, October 5, 1892; Dr. W. L. Abbott: Head, neck, chest, and upper breast bright scarlet (flame-scarlet on under parts); rest of under parts rather light chrome yellow, tinged with orange on abdomen and with scarlet on the crissum. Lores and orbits black. Back and scapulars light yellowish olive broadly streaked with black; rump plain light tawny olive-brown; upper tail-coverts flame-scarlet. Wings dull blackish, all the feathers margined with light olive or olive-yellowish; tail, olive grayish, the feathers edged with yellowish olive. "Bill black; irides dark brown; feet brownish flesh." Length (before skinning), 6.50 inches; wing, 3.30; tail, 2.10; culmen, 0.75; depth of bill at base, 0.50; tarsus, 0.92; middle toe, 0.65.

No. 128690, U.S.N.M., adult female, same locality and collector,

October 3: Pileum and hind neck deep olive-buff, narrowly and rather indistinctly streaked with dusky; superciliary stripe, cheeks, and sides of neck light brownish yellow; a postocular streak of dusky; anterior under parts pale Naples yellow (palest on throat), the posterior lower parts deeper yellow. Otherwise like the adult male, but without trace of red anywhere. "Upper mandible horny brown, lower mandible pale horny; feet flesh color." Length (before skinning), 5.50 inches; wing, 3.05; tail, 2.10; culmen, 0.70; depth of bill at base, 0.50; tarsus, 0.85; middle toe, 0.60.

Two other adult males show a mixture of red on the back, and one of them has the lower rump, as well as the upper tail-coverts, red. It is therefore probable that in full plumage this species has the red as extensive as in *F. madagascariensis*.

A young male is like the female described above, but is somewhat brighter yellow beneath.

"A very common species in Aldabra. Nesting in November, December, and January. Builds in casuarina trees, generally near the seashore. Nest made of casuarina needles, somewhat loosely constructed, oval in form, roofed over, with the entrance in the side and suspended from the end of a branch. Number of eggs four. The male assists in the construction of the nest, but not in incubation (?). These birds are very fond of the seeds of the casuarina tree and are also destructive to unripe maize. They are, however, apparently only able to reach the latter after the husks have been gnawed through by rats. They are very tame and familiar, coming in flocks to feed on the crumbs and scraps about the houses." (Abbott, MS.)

APPENDIX.

A.—CATALOGUE OF BIRDS ASCERTAINED TO OCCUR AMONG THE ISLANDS NORTH AND EAST OF MADAGASCAR, FROM THE COMOROS TO THE MASCARENE GROUP.

[Extinct species in heavy-faced type. Introduced species in parentheses. Peculiar species in italics.]

| | Reunion. | Mauritius. | Rodriguez. | Seychelles. | Amirantes. | Providence Bank. | Gloriosa. | Assumption. | Aldabra. | Mohilla. | Anjuan. | Mayotte. | Grand Comoro. |
|--|----------|------------|------------|-------------|------------|------------------|-----------|-------------|----------|----------|---------|----------|---------------|
| Family LARIDÆ. | | | | | | | | | | | | | |
| 1. <i>Sterna melanogaster</i> , Temminck | x | | | | | | | | | | | | |
| 2. <i>Sterna dongalli</i> , Montague | x | x | | | | | | | | | | | |
| 3. <i>Sterna media</i> , Horsfield | x | | | | | | | | | | | | |
| 4. <i>Sterna bernsteini</i> , Schlegel | | | x | x | x | x | x | | | | | | |
| 5. <i>Sterna bergii</i> , Lichtenstein | | | x | | | | | | | | | | |
| 6. <i>Sterna melanauchen</i> , Temminck | | | | | x | x | x | | x | | | | |
| 7. <i>Sterna minuta</i> , Linnaeus | | | | x | | | | | | | | | |
| 8. <i>Sterna balanarius</i> (Strickland) | | | | | | | | | | | | | |
| 9. <i>Sterna anæthetus</i> , Scopoli | x | x | x | x | | | | | | | | | |
| 10. <i>Sterna fuliginosa</i> , Gmelin | | | | x | | | x | | | | | | |
| 11. <i>Anous stolidus</i> (Linnaeus) | x | x | x | x | x | x | | | x | | | | |
| 12. <i>Anous tenuirostris</i> (Temminck) | x | x | | x | | | | | | | | | |
| 13. <i>Gygis alba</i> (Sparrmann) | x | x | x | x | x | x | | x | x | | | | |

A.—CATALOGUE OF BIRDS ASCERTAINED TO OCCUR AMONG THE ISLANDS NORTH AND EAST OF MADAGASCAR, ETC.—(Continued.)

| | Réunion. | Mauritius. | Rodriguez. | Seychelles. | Amirantes. | Providence Bank. | Gloriosa. | Assumption. | Aldabra. | Mohilla. | Anjouan. | Mayotte. | Grand Comoro. |
|---|----------|------------|------------|-------------|------------|------------------|-----------|-------------|----------|----------|----------|----------|---------------|
| Family STERCORARIIDÆ. | | | | | | | | | | | | | |
| 14. <i>Megalestris antarcticus</i> (Lesson)..... | | | | x | | | | | | | | | |
| Family PRCELLARIIDÆ. | | | | | | | | | | | | | |
| 15. <i>Ossifraga gigantea</i> (Gmelin)..... | x | | | | | | | | | | | | |
| 16. <i>Majaquicus aquinoctialis</i> (Linnaeus)..... | x | | | | | | | | | | | | |
| 17. <i>Prifinus cinereus</i> (Gmelin)..... | x | | | | | | | | | | | | |
| 18. <i>Puffinus tenobrosus</i> , Pelzeln? | x | x | | x | | | | | | | | | |
| 19. <i>Puffinus sphenurus</i> , Gould..... | | | | | x | | | | | | | | |
| 20. <i>Puffinus chlororhynchus</i> , Lesson..... | x | x | x | x | x | | | | | | | | |
| 21. <i>Aestrelata aterrima</i> (Schlegel)..... | x | | | | | | | | | | | | |
| 22. <i>Daption capensis</i> (Linnaeus)..... | x | | | | | | | | | | | | |
| 23. <i>Cymodroma melanogaster</i> (Gould) ¹ | | | | | | | | | | | | | |
| 24. <i>Oceanites oceanicus</i> (Kuhl)..... | x | | | | | | | | | | | | |
| 25. <i>Prion vittatus</i> (Forster)..... | x | | | | | | | | | | | | |
| 26. <i>Pseudoprion banksii</i> (Temminck)..... | | | | | | | | | | | x | | |
| 27. <i>Pseudoprion desolatus</i> (Gmelin)..... | x | x | | x | | | | | | | | | |
| Family DIOMEDEIDÆ. | | | | | | | | | | | | | |
| 28. <i>Thalassogeron chlororhynchus</i> (Gmelin)..... | x | | | | | | | | | | | | |
| Family DROMADIDÆ. | | | | | | | | | | | | | |
| 29. <i>Dromas ardeola</i> , Paykull..... | | | | x | x | x | x | | x | | | | |
| Family ARENARIIDÆ. | | | | | | | | | | | | | |
| 30. <i>Arenaria interpres</i> (Linnaeus)..... | x | x | x | x | x | x | x | | x | | x | | |
| Family CHARADRIIDÆ. | | | | | | | | | | | | | |
| 31. <i>Squatara squatarola</i> (Linnaeus)..... | x | x | | x | | | | | | | | | |
| 32. <i>Egialitis geoffroyi</i> , Wagler..... | x | x | | x | | x | | | x | | | | |
| 33. <i>Egialitis varius</i> (Vieillot)..... | x | x | | | | | | | | | | | |
| Family GLAREOLIDÆ. | | | | | | | | | | | | | |
| 34. <i>Glareola ocularis</i> , Verreaux..... | x | | | | | | | | | | | | |
| Family SCOLOPACIDÆ. | | | | | | | | | | | | | |
| 35. <i>Tringa minuta</i> , Leisler..... | | | | x | | x | | | | | | | |
| 36. <i>Tringa alpina</i> , Linnaeus..... | | ? | | | | | | | | | | | |
| 37. <i>Tringa ferruginea</i> , Brünnich..... | | x | | | | | | | x | | x | | |
| 38. <i>Calidris arenaria</i> (Linnaeus)..... | | | | | | | | | x | | | | |
| 39. <i>Actitis hypoleucos</i> (Linnaeus)..... | x | x | | x | | | | | x | | x | | |
| 40. <i>Terekia cinerea</i> (Gildenstadt)..... | | x | | | | | | | | | | | |
| 41. <i>Totanus glareola</i> (Linnaeus)..... | | | | | | | | | x | | | | |
| 42. <i>Totanus nebularius</i> (Günnerus)..... | | | | x | x | | x | | x | | | | |
| 43. <i>Numenius arguta madagascariensis</i> (Linnaeus)..... | x | ! | x | x | x | x | x | | x | | | | |
| 44. <i>Numenius phaeopus</i> (Linnaeus)..... | x | x | x | x | x | x | x | x | x | | | | x |
| Family RALLIDÆ. | | | | | | | | | | | | | |
| 45. <i>Aphanapteryx broeckii</i> (Schlegel)..... | | x | | | | | | | | | | | |
| 46. <i>Erythromachus leguati</i> (A. Milne-Edwards)..... | | | x | | | | | | | | | | |
| 47. <i>Hypotaenidia pectoralis</i> (Lesson)..... | | x | | | | | | | | | | | |
| 48. <i>Dryolimnas cucieri</i> (Pucheran)..... | | x | | | | | | | | | | | |
| 49. <i>Dryolimnas aldabranus</i> (Günther)..... | | | | | | | | | x | | | | |
| 50. <i>Dryolimnas abboti</i> , Ridgway..... | | | | | | | | | x | | | | |
| 51. <i>Gallinula chloropus</i> (Linnaeus)..... | | | | x | | | | | | | | | |
| 52. (<i>Gallinula pyrrhorochoa</i> (Granddier)..... | x | x | | | | | | | | | | | |
| 53. <i>Gallinula</i> sp. indet. ² | | | | | | | | | | | | | |
| 54. <i>Porphyrio porphyrio</i> (Linnaeus)..... | x | x | | | | | | | | | | | |
| 55. <i>Porphyriola alleni</i> (Thompson)..... | | x | | | | | | | | | | | |
| 56. <i>Fulica newtoni</i> , Milne-Edwards..... | | x | | | | | | | | | | | |
| Family ANATIDÆ. | | | | | | | | | | | | | |
| (57. <i>Anas melleri</i> (Selater).....) | x | x | | x? | | | | | | | | | |
| (58. <i>Dendrocygna viduata</i> (Linnaeus).....) | x | | | | | | | | | | | | |

¹ At sea, between Mauritius and Madagascar.² St. Denys.

A.—CATALOGUE OF BIRDS ASCERTAINED TO OCCUR AMONG THE ISLANDS NORTH AND EAST OF MADAGASCAR, ETC.—(Continued.)

| | Réunion. | Mauritius. | Rodriguez. | Seychelles. | Amirantes. | Providence Bank. | Cloriosa. | Assumption. | Alabra. | Niobilla. | Anjnan. | Mayotte. | Grand Comoro. |
|--|----------|------------|------------|-------------|------------|------------------|-----------|-------------|---------|-----------|---------|----------|---------------|
| Family PHOENICOPTERIDÆ. | | | | | | | | | | | | | |
| 59. <i>Phœnicopterus erythraus</i> , J. Verreaux ? | x | x | | | | | | | x | | | | |
| 60. <i>Phœnicopterus minor</i> Geoffroy St. Hilaire | | | | | x? | | | | | | | | |
| Family IBIDIDÆ. | | | | | | | | | | | | | |
| 61. <i>Ibis bernieri</i> , Bonaparte | | | | | | | | | | | | | |
| 62. <i>Ibis abbotti</i> , Ridgway | | | | | | | | | x | | | | |
| Family ARDEIDÆ. | | | | | | | | | | | | | |
| 63. <i>Ardea cinerea</i> , Linnaeus | | | | x | x | x | x | | x | | | | |
| 64. <i>Demigretta gularis</i> (Bosc) | x | | | | | | | | x | | | x | x |
| 65. <i>Garzetta garzetta</i> (Linnaeus) | ? | | | | | | | | | | | | |
| 66. <i>Bubulcus bubulcus</i> (Savigny) | ? | ? | | x | x | x | | | | | x | | |
| 67. <i>Ardeola comata</i> (Pallas) | | | | | | | | | | | | | |
| 68. <i>Ardeola leucoptera</i> (Boddaert) | x | | | | | | | | | | x | | |
| 69. <i>Butorides atricapillus</i> (Azelius) | x | | x | x | x | x | | | x | | x | x | x |
| 70. <i>Nycticorax megacephala</i> (A. Milne-Edwards) | | x | | | | | | | | | | | |
| 71. <i>Ardetta sinensis</i> (Gmelin) | | | | x | | | | | | | | | |
| Family PELECANIDÆ. | | | | | | | | | | | | | |
| 72. <i>Pelecanus rufescens</i> , Gmelin | | | | | | x | | | | | | | |
| Family SULIDÆ. | | | | | | | | | | | | | |
| 73. <i>Sula cyanops</i> , Sundevall | | | | | | | | x | x | | | | |
| 74. <i>Sula abbotti</i> , Ridgway | | | | | | | | | x | | | | |
| 75. <i>Sula leucogastra</i> (Boddaert) | | | | | | x | | | | | | | |
| 76. <i>Sula piscator</i> (Linnaeus) | ? | x | x | | x | x | x | x | x | | | | |
| Family FREGATIDÆ. | | | | | | | | | | | | | |
| 77. <i>Fregata aquila minor</i> (Gmelin) | x? | x | x | x | | x | x | x | x | | | | |
| 78. <i>Fregata ariel</i> (Gould) | | | | | | x | | | | | | | |
| Family PHAËTONTIDÆ. | | | | | | | | | | | | | |
| 79. <i>Phaëton rubricaudus</i> , Boddaert | | | | | | | | x | x | | | | |
| 80. <i>Phaëton candidus</i> , Drapez | x | x | x | x | | | | | | x | | | |
| Family PHASIANIDÆ. | | | | | | | | | | | | | |
| 81. <i>Gallus gallus</i> (Linnaeus.) | | | | | | | | x | | | | | |
| 82. <i>Francolinus pondicerianus</i> (Gmelin.) | x | x | x | | x | | | | | | | | |
| 83. <i>Francolinus chinensis</i> (Osbeck.) | x | x | | | | | | | | | | | |
| 84. <i>Margaroperdix madagascariensis</i> (Scopoli) | x | x | | | | | | | | | | | |
| 85. <i>Perdicula argoondah</i> (Sykes) | x | x | | | | | | | | | | | |
| 86. <i>Excalfactoria chinensis</i> (Linnaeus.) | | x | | | | | | | | | | | |
| 87. <i>Coturnix coturnix</i> (Linnaeus) | | | | | | | | | | | x | x | |
| Family NUMIDIDÆ. | | | | | | | | | | | | | |
| 88. <i>Numida mitrata</i> , Pallas) | | x | x | | | | | | | | x | x | x |
| Family DIDIDÆ. | | | | | | | | | | | | | |
| 89. <i>Didus ineptus</i> , Linnaeus | | x | | | | | | | | | | | |
| 90. <i>Didus borbonicus</i> (Bonaparte) | | x | | | | | | | | | | | |
| 91. <i>Pezophaps solitarius</i> (Gmelin) | | | x | | | | | | | | | | |
| Family COLUMBIDÆ. | | | | | | | | | | | | | |
| 92. <i>Alectronas rodericana</i> (Milne-Edwards) | | | x | | | | | | | | | | |
| 93. <i>Alectronas pulcherrima</i> (Scopoli) | | | | x | | | | | | | | | |
| 94. <i>Alectronas spazini</i> (Verreaux) | | | | | | | | | x | | x | x | x |
| 95. <i>Alectronas nitidissima</i> (Scopoli) | | | | x | | | | | | | | | |
| 96. <i>Columba polleni</i> , Schlegel | | | | | | | | | | | x | x | x |
| 97. <i>Nesoenas mayeri</i> (Marchal) | | x | | | | | | | | | | | |
| 98. <i>Turtur picturatus</i> (Temminck) | x | x | | x | | | | | | | | | |
| 99. <i>Turtur aldabranus</i> , Selater | | | | | | | | | x? | x | | | |

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1877. NEWTON, EDWARD, M. A., C. M. G., etc. On a collection of birds from the island of Anjnan.
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From Assumption: (6) *Sula abbotti*, p. 599.
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